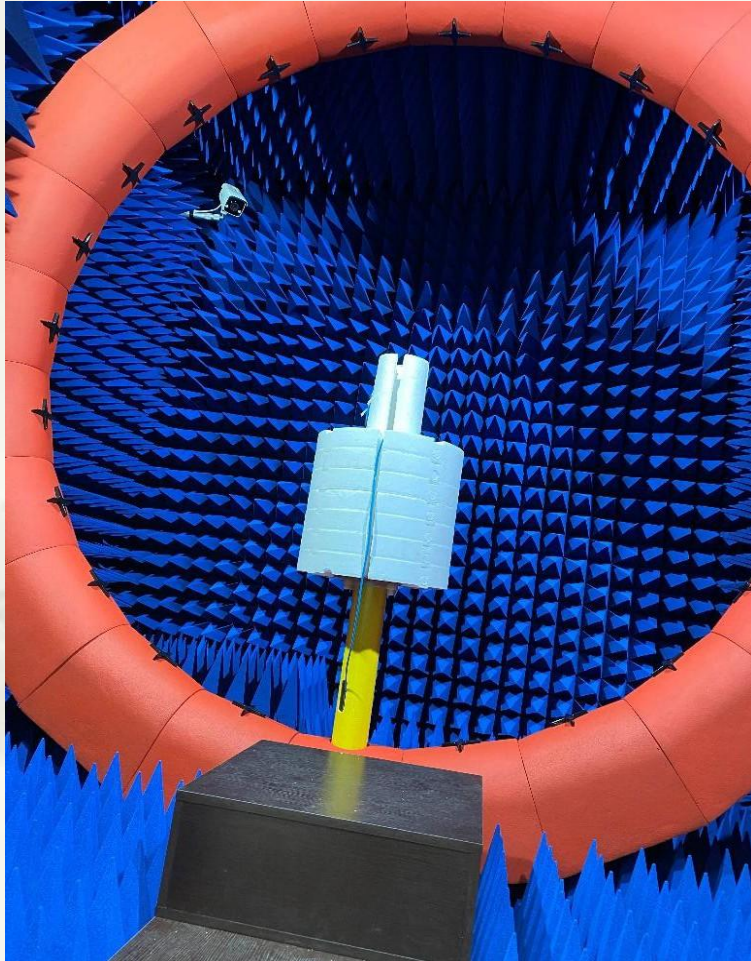


Antenna Test Report

Product model:	ZGB
Chip:	AD6976D
Date:	2021-10-23
Antenna type:	WAN3216F245H08

Experimental equipment



FTM-24D多探头微波暗室



网络分析仪E5071C

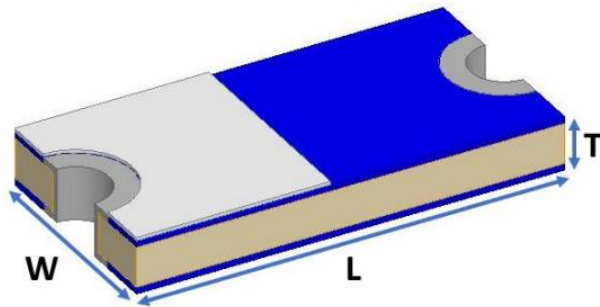


无线综测仪CMW500

Antenna size

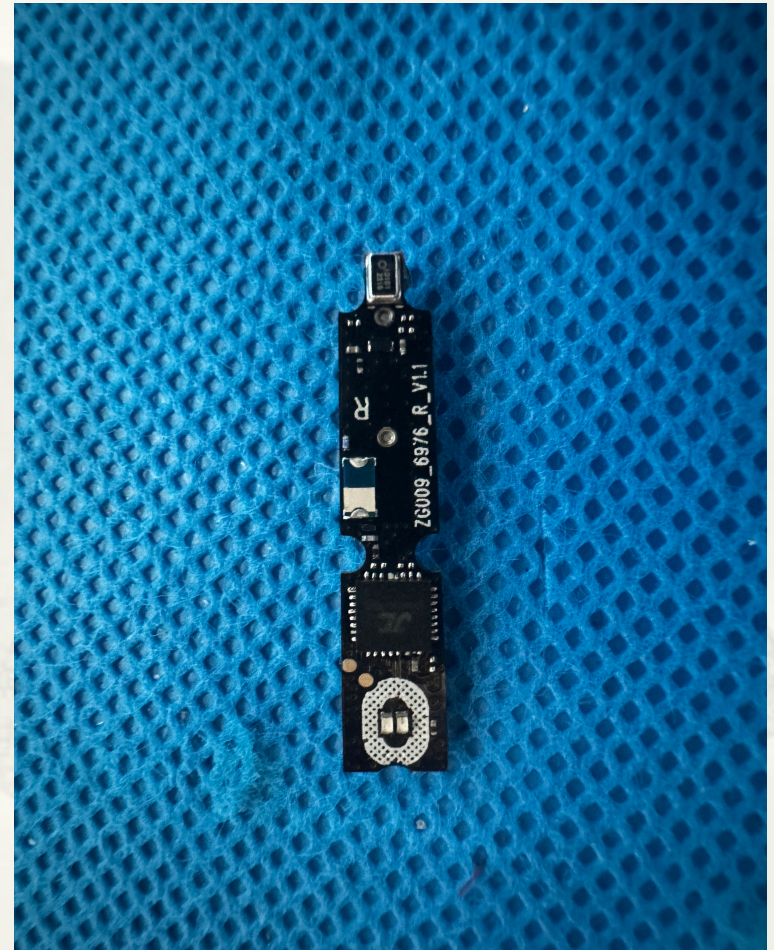
3216 Chip antenna

For Bluetooth / WLAN Applications



P/N: WAN3216F245H08

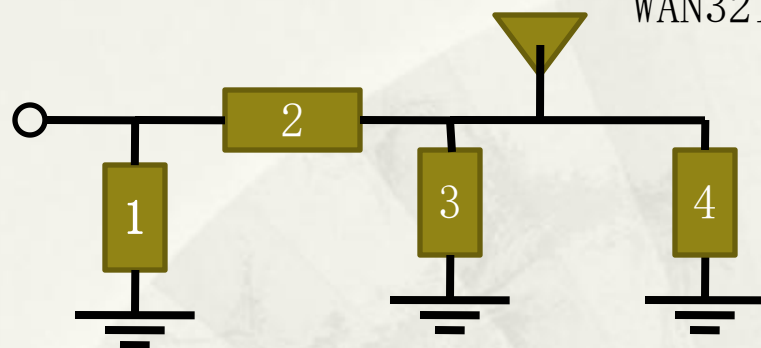
	Dimension (mm)
L	3.23 ± 0.20
W	1.66 ± 0.20
T	0.45 ± 0.20



Antenna matching

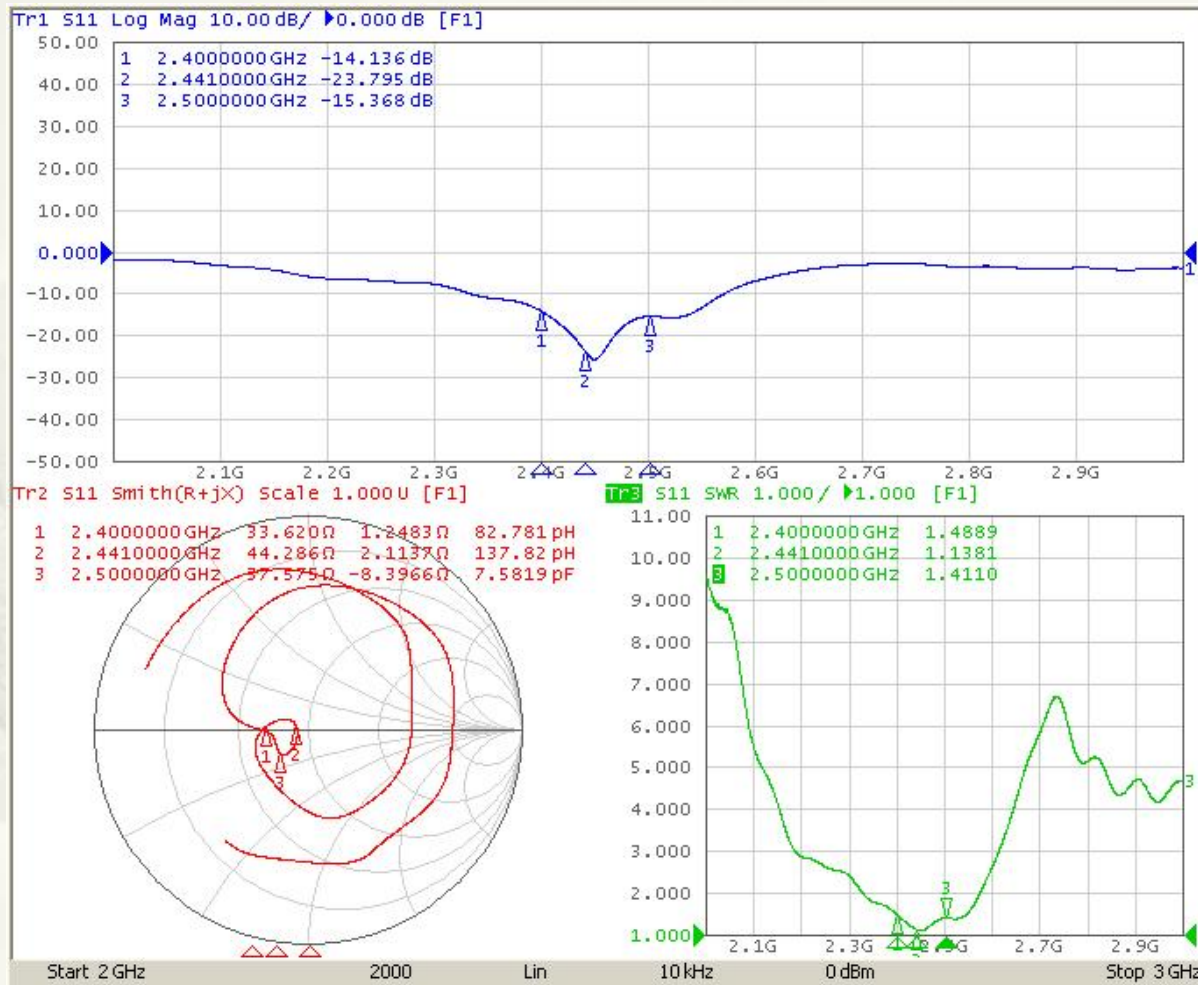
● Antenna matching parameter

WAN3216F245H08



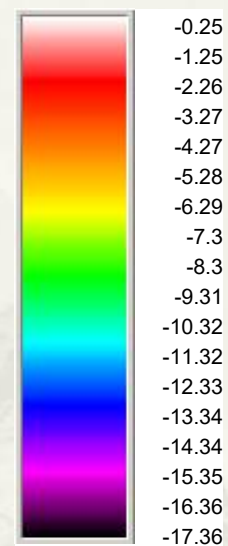
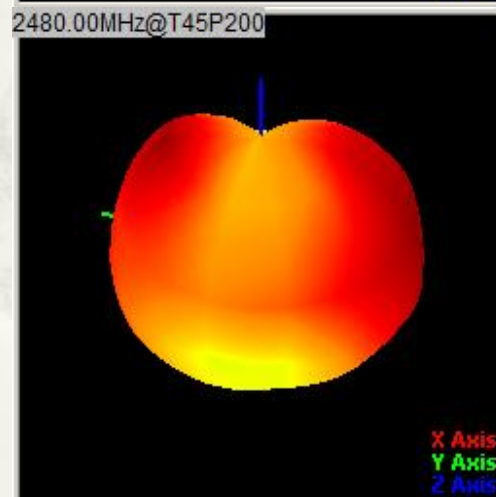
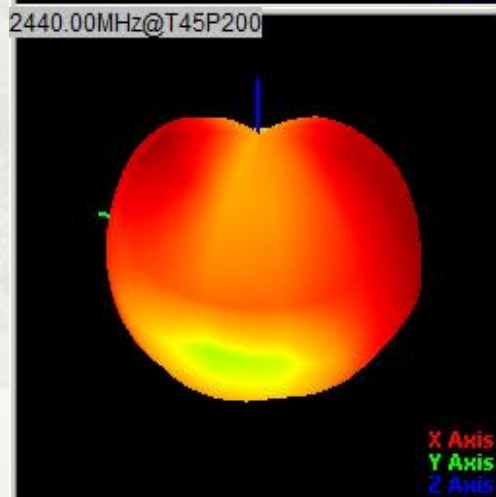
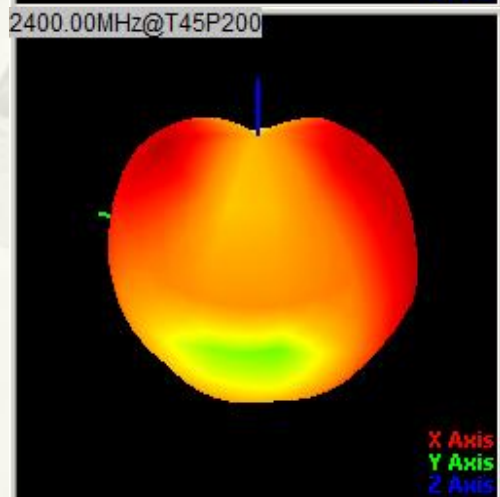
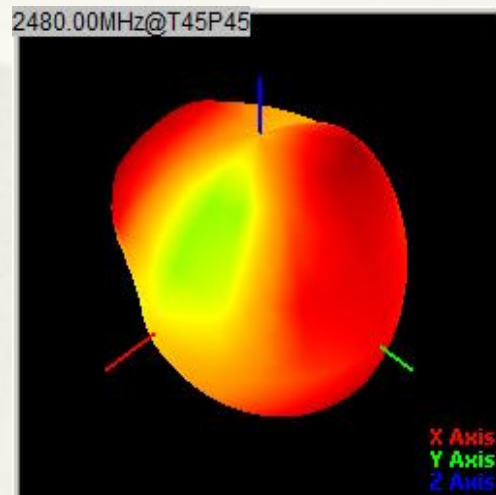
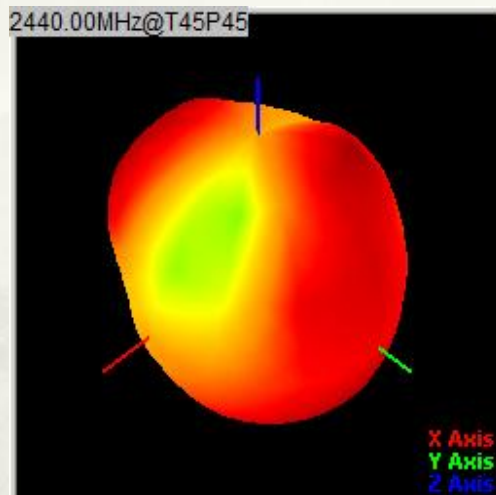
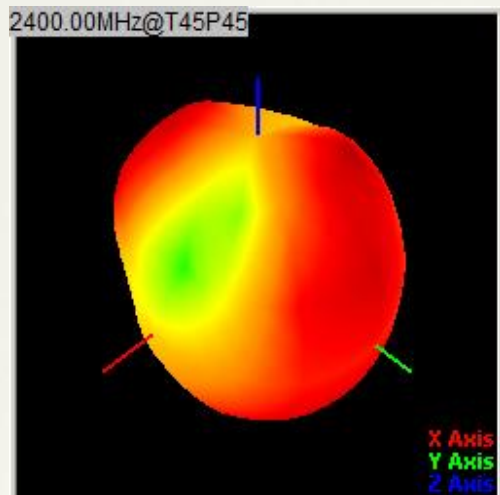
		L/C	P/N
	ANT	WAN3216F245H08	
L/R	1	NC	
	2	OR	Yageo
	3	2.0PF+/-0.25PF	Murata
	4	1.0nH+/-0.2nH	Murata

Passive standing wave pattern



Free-space passive data

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Point Values											
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-4.45	-4.11	-3.93	-3.73	-3.71	-3.52	-3.64	-3.83	-4.06	-4.18	-4.08
Peak EIRP (dBm)	-1.17	-0.75	-0.52	-0.28	-0.15	0.12	0.02	-0.07	-0.25	-0.26	-0.19
Directivity (dBi)	3.27	3.36	3.40	3.45	3.56	3.64	3.66	3.76	3.82	3.92	3.89
Efficiency (dB)	-4.45	-4.11	-3.93	-3.73	-3.71	-3.52	-3.64	-3.83	-4.06	-4.18	-4.08
Efficiency (%)	35.90	38.80	40.50	42.40	42.50	44.50	43.20	41.40	39.20	38.20	39.10
Gain (dBi)	-1.17	-0.75	-0.52	-0.28	-0.15	0.12	0.02	-0.07	-0.25	-0.26	-0.19
NHPRP \pm Pi/4 (dBm)	-5.74	-5.40	-5.20	-5.02	-5.02	-4.87	-5.01	-5.22	-5.47	-5.59	-5.50
NHPRP \pm Pi/6 (dBm)	-7.53	-7.18	-6.98	-6.79	-6.81	-6.67	-6.81	-7.02	-7.25	-7.37	-7.27
NHPRP \pm Pi/8 (dBm)	-10.65	-10.26	-10.02	-9.82	-9.92	-9.81	-9.95	-10.15	-10.33	-10.43	-10.31
Upper Hem. PRP (dBm)	-7.26	-6.93	-6.78	-6.61	-6.58	-6.37	-6.41	-6.53	-6.69	-6.74	-6.59
Lower Hem. PRP (dBm)	-7.66	-7.32	-7.10	-6.87	-6.86	-6.70	-6.91	-7.18	-7.49	-7.70	-7.67
Upper Hem. PRP (%)	18.80	20.29	20.99	21.85	21.96	23.09	22.85	22.23	21.41	21.20	21.95
Lower Hem. PRP (%)	17.13	18.53	19.51	20.54	20.59	21.37	20.39	19.15	17.81	16.99	17.11



OTA Test data TRP/TIS

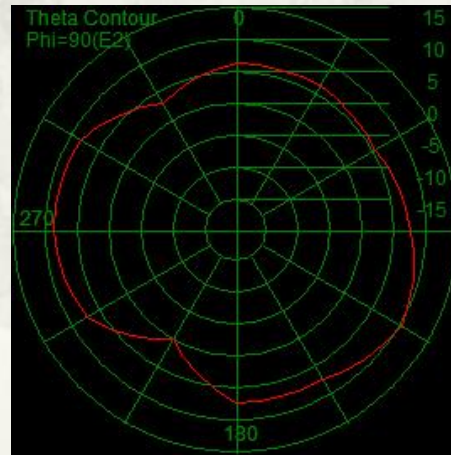
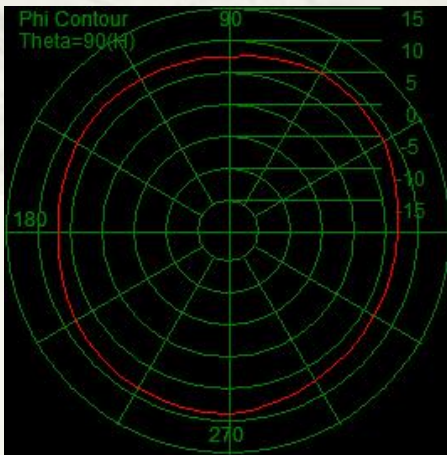
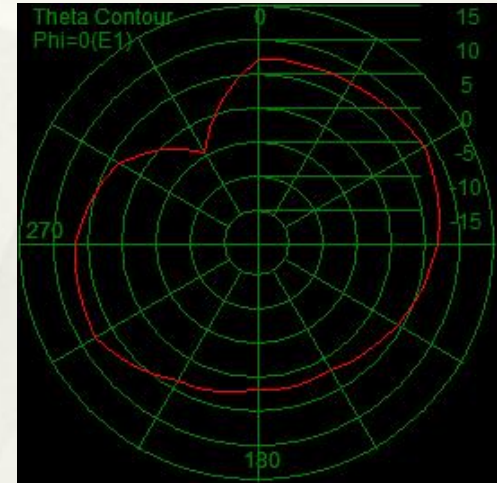
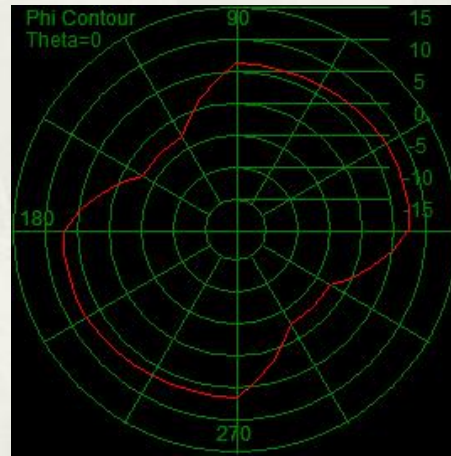
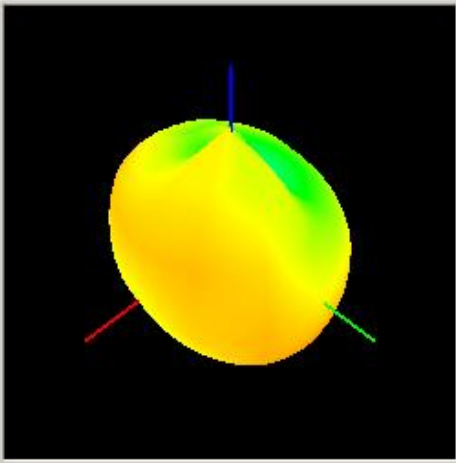
Bluetooth Band Antenna Performance Table

Whole Band TRP (dBm) 7.10
 Whole Band TIS (dBm) -85.07

	Channel No.	Freq. (MHz)	TRP (dBm)	TIS (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)	Max (dBm)	Theta of Max	Phi of Max	Min (dBm)	Theta of Min	Phi of Min	AVG (dBm)	Max/Min (dB)	Max/AVG (dB)	Min/AVG (dB)
Phone Tx (Uplink Path)	1	0	7.72	--	--	--	--	--	11.63	0	0	-3.21	0	0	7.30	14.83	4.32	5.06
	2	39	6.73	--	--	--	--	--	10.31	0	1	-4.52	0	1	6.38	14.83	3.53	3.91
	3	78	6.77	--	--	--	--	--	10.54	0	2	-5.82	0	2	6.47	16.36	3.35	4.13
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phone Rx (Downlink Path)	1	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2	39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3	78	--	-89.84	--	--	--	--	-77.26	0	2	-93.62	0	2	-85.93	16.36	-86.43	-87.20
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Active field pattern TRP

Channel 39 2440MHZ



Active field pattern TIS

Channel 78 2480MHZ

